INTRAMEDULLARY TUBERCULOMA OF THE SPINAL CORD

TUNG HUI LIN, M.D.*
State University of New York, Downstate Medical Center, and Neurosurgical Service of Kings County Hospital, Brooklyn, New York

(Received for publication November 10, 1958)

Since the report of Serre of Paris in 1830, the rare incidence of tuberculoma of the spinal cord has been commented on by various authors. Jennings found only 1 spinal cord tuberculoma among 5,344 patients with tuberculosis of the lung. Jaffé and Schultz disclosed 1 spinal cord tuberculoma in 7,000 autopsies contrasted with 48 cerebral tuberculomas in the same group. In Kernohan's statistics the ratio of spinal cord tuberculoma to other spinal cord tumors was 1:48. Thalhimer and Hassin collected 84 cases but only 67 were definitely documented. They added 1 case. Kupka and Olsen collected 19 more cases since the time of Thalhimer and Hassin's report and added 1. As far as can be ascertained, 16 additional cases have been reported, thus bringing the total to 104 in the literature. The cases of Bucy, Caravetta, and Jiménez have not been included in the present compilation since they were of intradural but extramedullary tuberculoma.

Among the 104 cases of intramedullary tuberculoma, the specimens in 88 were from postmortem examinations and in 16 were removed surgically: Veraguth and Brun, Thalhimer and Hassin, Elsberg, Dandy, Krauss and McGuire, McBurney, Waring, Arseni, and Bertrand et al. Seven of the patients operated upon were reported to have had successful results: Veraguth and Brun, Elsberg, Arseni, and Bertrand et al. The present report adds another successful removal of intramedullary tuberculoma from the distal spinal cord.

CASE REPORT

KCII #57-1634. E.K., a 47-year-old Negro female, was well until 4 months prior to admission, when there was gradual onset of pain in the lower back with radicular pain into the left groin. Three months before admission there was difficulty in climbing stairs. One month later there was more obvious disturbance in gait which gradually became worse. The right leg was weaker than the left. Two weeks prior to entry there was rapid onset of sharp pain in the lower part of the back followed by urinary retention and total inability to walk. There was no history of pulmonary tuberculosis, and there had been no serious illness, infections or systemic diseases. The family history was not contributory.

Examination. On admission the patient was a chronically ill, anemic and emaciated negro female who was paraplegic and incontinent of urine. Blood pressure was 100/60 Hg, temperature 99°F, pulse rate 72 and respiratory rate 20 per min. The breath sounds over the apical region of both lungs were diminished. There was no deformity, or tenderness on percussion of the spine.

The lower extremities were paralyzed and flaccid except for slight tone of both quadriceps femoris muscles. Tendon reflexes of the upper extremities were equally active but patellar and Achilles tendon reflexes were not obtained. Deep obdurate reflexes were brisk in both upper quadrants, diminished in the right lower and absent in the left lower quadrant. No movement of the toes followed plantar stimulation. There were anesthesia and analgesia

* Present address: St. Barnabas Hospital, New York 57, New York.

497
from L4 dermatome zones distally, hypesthesia and hypalgesia from L1 to L4 on the right and from T11 to L4 on the left. There was complete loss of sensation of the saddle area. The anal reflex was absent. Appreciation of passive movement of the toes was impaired on the right but intact on the left. Vibratory sensation was impaired on the right and diminished on the left.

Count of red blood cells was 2,700,000 and white blood cells 5,000 (polymorphonuclear leucocytes 66, mononuclear leucocytes 4, and lymphocytes 30). Hemoglobin was 8.5 gm.; blood sugar, BUN, serological findings for syphilis and urinalysis were within normal limits.

Roentgenograms of the chest showed evidence of a fibrotic infiltrative lesion in the left pulmonary apex. Films of the spine revealed sclerosis of the bodies of L2 and L4 but no destructive lesion was disclosed.

Myelography on the 2nd hospital day revealed complete obstruction of the Pantopaque column at the upper level of L1 vertebra.

Operation. Immediately after myelography, laminectomy was performed from T10 to L1. There were no pathological findings of osseous and epidural structures. Upon opening the dura mater, mild adhesion between it and the spinal cord was noted at the level of T11 vertebra. This was separated easily by blunt dissection. Immediately under the adhesion there was an intrinsic mass in the lumbar enlargement of the cord. Its surface was smooth and covered by pia mater with engorged and tortuous small vessels. The mass was grayish in color and felt firm when examined with the tip of the forceps. The tumor was situated more to the right side, displacing the spinal cord to the left. Aspiration of the mass yielded no fluid or purulent material. The dorsal aspect of the cord was incised longitudinally and enucleation of the nodule was carried out without difficulty. Hemostasis was established and the wound was closed in layers. The specimen measured 2.2×2×1.4 cm.

Histological Examination. The surgical specimen was a concentrically constructed granulomatous abscess, the center of which was filled with caseous substance. This was surrounded by numerous Langhans' giant cells and foci of chronic inflammation. Special stain of the tissue revealed acid-fast bacilli, and the specimen was reported as tuberculoma by the neuropathological department.

Postoperative Course. Antituberculous regime was employed, and slow but steady recovery from the paraplegia ensued. The recovery of motor power was observed in the right lower extremity on the 4th postoperative day and by the end of 6 months after operation she was ambulatory with crutches and able to control the urine.

DISCUSSION

In review of the literature it was found that most of the patients had pulmonary tuberculosis prior to the onset of symptoms indicating spinal cord dysfunction with the exception of the case reported by Bertrand et al. All of the patients with spinal cord involvement did not have Pott's disease of the vertebra. In our case, the patient had denied pulmonary tuberculosis in her past history and family history. Copious cultures of fasting gastric contents during hospitalization failed to reveal tubercle bacilli. However, the fibrotic infiltrative lesion shown in the roentgenogram of the chest and the poor general condition of the patient on admission would seem to suggest that the patient had had an insidious pulmonary tuberculosis followed by an indolent course. We therefore agree with the majority of the previous reporters that the intramedullary tuberculoma of the central nervous system is a blood-borne infestation of tubercle bacilli secondary to infection of the lung. The lesions reported in the literature have been almost evenly distributed in the cervical, thoracic and lumbosacral portions of the cord. Enucleation of the tuberculoma per se is not difficult, and therefore operative removal is indicated in the case of a solitary tubercle without extensive generalized tuberculosis. Available antitubercu-
intramedullary tuberculoma at present not only tends to prevent tuberculous meningitis but also enhances regional fibrosis of the possibly unremoved part of the tuberculoma.

SUMMARY

The incidence of intramedullary tuberculoma of the spinal cord is low and becomes rarer as public health and medicine in general progress. So far, there have been 104 cases reported in the literature, among which specimens in 16 cases were removed surgically and in the remaining 88 cases the lesions were disclosed at postmortem examination. Successful surgical results have been reported previously in 7 cases and another case of favorable outcome has been added.

REFERENCES

8. JAFFÉ, R. H., and SCHULTZ, A. Cited by Webster18
13. McBURNET. Cited by Starr.14